

# **EXHIBIT 3**

**FILED UNDER SEAL**

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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION

GOOGLE LLC,  
Plaintiff and Counter-defendant,  
v.  
SONOS, INC.,  
Defendant and Counter-claimant.

Case No. 3:20-cv-06754-WHA  
Related to Case No. 3:21-cv-07559-WHA

**REPLY EXPERT REPORT OF  
DOUGLAS C. SCHMIDT**

1        **VI. ASSERTED CLAIMS & CLAIM CONSTRUCTION**

2        15.      As discussed in my Opening Report, I understand Sonos is currently asserting that  
3 the following claims from the '033 Patent are infringed directly and indirectly by Google. These  
4 are the claims that I have been asked to opine on.

5            • “Computing device” claims: 1, 2, 4, 9, 11, 16  
6            • “Computer-readable medium” claims: 12, 13

7        16.      I previously provided my opinions regarding claim construction of the foregoing  
8 claims, including a summary of the Court’s construction of the term “playback queue” and the  
9 Court’s rejection of Google’s proposed construction that the term “remote playback queue” is  
10 limited to a “third-party application.”

11        17.      Specifically, I understand that the claim term “playback queue” refers to a “list of  
12 multimedia content selected for playback,” with the following characteristics:

13            • The playback queue is the list of media items that is used for playback;  
14            • The playback queue contains the entire list of media items selected for playback;  
15            • The playback queue is not being used merely to process the list of media items for  
16            playback; and  
17            • The playback queue is the queue that “runs the show.”

18        18.      As I noted in my Opening Report, however, the '033 Patent’s claims do not recite  
19 the term “multimedia content” like the '615 Patent’s claims do. Instead, the '033 Patent’s claims  
20 recite the term “media item.” For purposes of the '033 Patent, therefore, I will interpret the Court’s  
21 construction of “playback queue” (provided in the context of claim 13 of the '615 Patent) as “*a list  
22 of one or more media items selected for playback.*” However, my opinions would remain the same  
23 under the Court’s exact construction of “playback queue” provided in the context of claim 13 of  
24 the '615 Patent and applied verbatim by Dr. Bhattacharjee because a POSITA would understand  
25 that the term “multimedia content” is synonymous with the term “media item” in the context of the  
26 '033 and '615 Patents.

27        19.      I also understand that Google sought leave from the Court to file supplemental claim  
28 construction briefing to enable Google to argue that the term “remote playback queue” means “a  
playback queue provided by a third-party application.” However, I understand that the Court  
recently denied Google’s request to file supplemental claim construction briefing. *See* Dkt. 432.

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1 In doing so, I understand the Court has precluded Google (and Dr. Bhattacharjee) from arguing that  
2 the claimed “remote playback queue” is limited to a “third-party application.” *Id.* Thus, I  
3 understand the term “remote playback queue” should be interpreted in accordance with its plain  
4 and ordinary meaning in the context of the ’033 Patent, as I interpreted it in my Opening Report.  
5 *See* Schmidt. Op. Report, ¶¶236-41 (explaining that a “remote playback queue” is not local to the  
6 device(s) that are to playback content from the queue and that the remainder of the claim language  
7 informs a POSITA that the claimed “remote playback queue” resides in the cloud); *see also, e.g.,*  
8 Dkt. 316 [Order Granting Motion for Partial Summary Judgment as to ‘615 Patent], 6 (“As detailed  
9 further below, Google’s cast technology currently manages content queues, broadly speaking, by  
10 storing such a queue on a *remote* cloud server on the internet. The parties refer to this remote queue  
11 as a cloud queue. The parties agree that the cloud queue is not a ‘local playback queue,’ as required  
12 by limitation 13.5(a) [of the ‘615 Patent], because it’s stored remotely on the internet as opposed  
13 to being stored locally on the playback device.”) (Court’s emphasis).

14 20. Other than the above-discussed order, I understand that no other claim construction  
15 order has been issued in this case and that the parties dispute the meaning of various terms relevant  
16 to the ’033 Patent as follows:

Term	Sonos	Google
“playback device”	“data network device configured to process and output audio”	Plain and ordinary meaning
“data network”	Plain and ordinary meaning, which is “a medium that interconnects devices, enabling them to send digital data packets to and receive digital data packets from each other”	Plain and ordinary meaning
“cloud”	Plain and ordinary meaning	“over a network”
“an instruction for the at least one given playback device to take over responsibility for playback of the remote playback queue from the computing device, wherein the instruction configures the at least	Plain and ordinary meaning	Instruction means one instruction

1       30. **Second**, Dr. Bhattacharjee's overview of "YouTube Music on Hub Device" 2 addresses stream transfer to a *dynamic* group of Receivers that is entirely irrelevant to my 3 infringement analysis. Specifically, Dr. Bhattacharjee opines that "selecting one or more of the 4 playback devices on the display does not stop the Hub Device's playback of the media and instead 5 adds the selected devices to form a '*dynamic*' speaker group." Bhatta. Rebuttal Report, ¶99. 6 However, Sonos has not accused that forming a *dynamic* group using a Hub device provisioned 7 with the YouTube Music app would satisfy any Asserted Claim of the '033 Patent. Instead, I 8 previously explained that a Hub device provisioned with the YouTube Music app can display a 9 representation of one or more "devices," where a "device" could correspond to a *static* "speaker 10 group" of multiple Receivers. *See, e.g.*, Schmidt Op. Report, ¶264. This is shown in Appendix 2 11 of my Opening Report. *Id.*, Appendix 2, 57. As shown below, Dr. Bhattacharjee also distinguishes 12 dynamic grouping (image 5A) and static grouping (image 5B) in his report.

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*See* Bhatta. Rebuttal Report, ¶101. Unlike dynamic grouping, with respect to image 5B of his 23 report, Dr. Bhattacharjee acknowledges that "[s]electing 'Group 1' thus results in ... playing back 24 media only on the Living Room speaker device." *Id.*

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31. Dr. Bhattacharjee's overview is therefore flawed for at least the foregoing reasons.

26

**B. Dr. Bhattacharjee Failed to Apply the Same Claim Scope to "Playback Queue" For Purposes of Noninfringement and Invalidity**

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32. I understand that the same claim scope must be applied to noninfringement and 28 invalidity. However, it is my opinion that Dr. Bhattacharjee did not apply the same claim scope of

1 the term “playback queue” for purposes of noninfringement and invalidity, despite suggesting that  
2 he was applying the Court’s construction for the term “playback queue” in his Opening and  
3 Rebuttal Reports. *See* Bhatta. Op. Report, ¶84, Bhatta. Rebuttal Report, ¶27.

4 33. For instance, for purposes of invalidity, Dr. Bhattacharjee equates a “playback  
5 queue” to *any* stored list of media items (e.g., a “playlist,” such as a “Magic Playlist,” an album,  
6 etc.) in his Opening Report. *See, e.g.*, Bhatta. Op. Report, ¶¶492-95 (equating “cloud-hosted  
7 playlists” “e.g., AC/DC album” to a “remote playback queue”), ¶499 (equating “Magic Playlist” to  
8 a “remote playback queue”); *see also, e.g.*, *id.*, ¶¶186, 220, 509-11, 526, 531, 533, 544-45. In turn,  
9 Dr. Bhattacharjee opines that *any* **cloud-stored** “playlist” of media items amounts to the claimed  
10 “remote playback queue.”

11 34. However, for purposes of noninfringement, Dr. Bhattacharjee opines that a  
12 “playlist” and a “playback queue” are “two distinct items.” *See, e.g.*, Bhatta. Rebuttal Report, ¶50  
13 (“A user can playback playlist by adding it to a queue.”), ¶63 (“[T]he playlist and queue are **two**  
14 **distinct items**, such that adding a song to the queue does not add it to the playlist.”), ¶70 (“Because  
15 the local playback queue and the playlist from which it was initially populated are **two distinct**  
16 **items**, changes to the local playback queue are not reflected in any playlist.”); *see also id.*, ¶61  
17 (“The entire **playlist** can be added to the **queue** or individual items can be added to the queue.”).  
18 Dr. Bhattacharjee also confirms my understanding that a “playlist” must be caused to be added to  
19 a “playback queue,” thereby designating the contents of the “playlist” **for playback**. *See, e.g.*, *Id.*,  
20 ¶46 n.1 (“[W]hen a media item is added to a playlist it is saved for later playback. **When a user**  
21 **later selects the playlist for playback** the media items in **the playlist may be added to a queue**, and  
22 the queue is then played back. When a user selects the “Add to queue” option, the selected media  
23 item is directly added to the queue rather than a playlist”), ¶50 (“A user can playback playlist by  
24 adding it to a queue.”). In fact, Dr. Bhattacharjee opines that “a POSITA would have understood  
25 that a YouTube **playlist** on a server, standing alone, is not a ‘playback queue’ under the Court’s  
26 construction.” *Id.*, ¶172.

27 35. Dr. Bhattacharjee’s overview is therefore flawed for this additional reason.  
28

1           C.    **Dr. Bhattacharjee's Opinions Contradict Google & Dr. Bhattacharjee's**  
2           **Representations to the Court**

3           36.    Dr. Bhattacharjee expends a considerable amount of his effort in his overview  
4           explaining that (i) “manipulations” to the Sender’s queue is “entirely local and are not based on  
5           inputs by a cloud server, and, indeed are not reflected back to any so-called queue on a YouTube  
6           server” (Bhatta. Rebuttal Report, ¶68; *see id.*, ¶69), (ii) media items (i.e., “Autoplay items” or  
7           “service-recommended videos”) set for playback in non-casting/local playback mode may be  
8           different than those played after transitioning to casting/remote mode (*see id.*, ¶¶54, 56-57, 96), and  
9           (iii) “changes to the [Sender’s] local playback queue are not reflected in any playlist.” *Id.*, ¶70, *see*  
10           *also id.*, ¶¶61-64. Dr. Bhattacharjee’s opinions are flawed for various reasons.

11           37.    **First**, Dr. Bhattacharjee’s opinions that “manipulations” to the Sender’s queue is  
12           “entirely local and are not based on inputs by a cloud server, and, indeed are not reflected back to  
13           any so-called queue on a YouTube server” (Bhatta. Rebuttal Report, ¶68; *see id.*, ¶69) and “changes  
14           to the [Sender’s] local playback queue are not reflected in any playlist” (*id.*, ¶70, *see also id.*, ¶¶61-  
15           64) are ultimately unpersuasive based on Google and Dr. Bhattacharjee’s repeated representations  
16           to the Court.

17           38.    As discussed before, Google and Dr. Bhattacharjee repeatedly represented to the  
18           Court that the accused YouTube systems ***use only*** a “remote playback queue” (also referred to by  
19           Google and Dr. Bhattacharjee as a “cloud queue”). Schmidt Rebuttal Report, ¶302. Google and  
20           Dr. Bhattacharjee also repeatedly represented to the Court that the existence of a “local playback  
21           queue” in a system is ***mutually exclusive*** of a “remote playback queue” (or “cloud queue”) and ***vice  
versa***. *Id.*, ¶303. Regardless, that a user can make changes at the Sender’s queue is irrelevant  
22           because ultimately the list of media items selected for playback that is provided by the YouTube  
23           cloud infrastructure runs the show for the Sender and Receiver.

24           39.    In fact, I understand that the Court accepted Google and Dr. Bhattacharjee’s  
25           representations that a system cannot have both a “local playback queue” and a “remote playback  
26           queue”/“cloud queue” because “locally-stored information is merely a mirror reflecting a subset of  
27           what is happening in the cloud queue.” Dkt. 316, 9-10. I understand that, according to the Court,  
28           a subset of media items (such as that stored by a playback device when used with the accused

1 YouTube apps) did not constitute a “playback queue” because they “merely provide the means to  
2 *process* the lists for playback. In short, “the cloud queue runs the show.” *Id.*, 10.

3 40. **Second**, Dr. Bhattacharjee’s assertions that media items (i.e., “Autoplay items” or  
4 “service-recommended videos”) set for playback in non-casting/local playback mode may be  
5 different than those played after transitioning to casting/remote mode (Bhatta. Rebuttal Report,  
6 ¶¶54, 56-57, 96) are also irrelevant because the ***content*** of the “remote playback queue” is not  
7 determinative. *Infra* ¶¶170-74.

8 41. Dr. Bhattacharjee’s overview is therefore flawed for these additional reasons.

9 **D. Dr. Bhattacharjee’s Characterization of Google’s MDx Protocol Is Flawed**

10 42. Dr. Bhattacharjee discusses Google’s MDx protocol at paragraphs 75-79 of his  
11 Rebuttal Report. However, virtually all of his discussion is irrelevant to his opinions regarding  
12 alleged non-infringement. I also note that his discussion of the history of the MDx protocol is  
13 inaccurate and incomplete, including the dates that he claims certain events or milestones occurred.  
14 However, because his discussion has no bearing on his alleged non-infringement positions, I do not  
15 need to address it in this Report.

16 **E. Dr. Bhattacharjee’s Overview of YouTube on a User Device**

17 43. Dr. Bhattacharjee’s purports to provide an “overview” of the accused YouTube apps  
18 running on a user device. *See* Bhatta. Rebuttal Report, §IX.A. I note that Dr. Bhattacharjee’s  
19 overview is incomplete and inaccurate.

20 **1. Dr. Bhattacharjee’s Overview of Playing Back Media on User Device**

21 44. To start, Dr. Bhattacharjee’s overview of playing back media on a user device via a  
22 YouTube app (Bhatta. Rebuttal Report, ¶¶45-70) is incomplete and inaccurate. In this regard, Dr.  
23 Bhattacharjee’s “overview” focuses primarily on what he refers to as “User Playlists.” Bhatta.  
24 Rebuttal Report, ¶45 (“Using the YouTube Main and YouTube Music application on their mobile  
25 devices, users may select media items (e.g., videos or songs) and add them to a playlist. [Dr.  
26 Bhattacharjee] will refer to these playlists as ‘UserPlaylists’ or ‘User-CreatedPlaylists.’”), ¶46.

27 45. However, as I explained in my Opening Report, each YouTube app except for the  
28 YouTube TV app enables a user to select a collection of media items for playback at the Sender  
that the user does not create, such as service-provided playlists, albums, etc. *See, e.g.*, Schmidt Op.

1       91.     Moreover, as set forth in my Rebuttal Report, I understand that, in convincing the  
2 Court to rule in its favor on both non-infringement and invalidity of claim 13 of the '615 Patent,  
3 Google and Dr. Bhattacharjee made numerous, broad-sweeping characterizations regarding  
4 Google's predecessor systems relative to the accused YouTube and GPM systems that directly  
5 contradict Dr. Bhattacharjee's assertion that his opinion is also supported by the Court's Order  
6 Granting Google's Motion for Summary Judgment for the '615 Patent. *See* Schmidt Rebuttal  
7 Report, ¶¶301-302. Critically, Google conceded that the accused YouTube apps used a "remote  
8 playback queue" as opposed to a "local playback queue." *Id.* I therefore disagree with Dr.  
9 Bhattacharjee's opinion that the Court's Order supports his opinion regarding infringement.

10       92.     Second, Dr. Bhattacharjee dismisses the indirect evidence I have cited in my  
11 Opening Report because I "cite[d] to publications describing how to download the YouTube app  
12 or Casting in general," "[b]ut there is no indication that these articles have any bearing on the  
13 specific individual limitations of the '033 patent," and "these generic publications do not  
14 demonstrate that Google 'knew (or should have known)' that it infringed any asserted claim of the  
15 '033 patent." Bhatta. Rebuttal Report, ¶124 (citing Schmidt Op. Report, ¶¶452-459).

16       93.     To start, Dr. Bhattacharjee appears to misunderstand how infringement of an  
17 "apparatus" or "device" claim works. As I explained in my Opening Report, Google's  
18 encouragement for users to install YouTube apps onto their computing devices results in "making"  
19 an infringing device.

20       94.     Moreover, Dr. Bhattacharjee genericizes the evidence I cited in my Opening Report  
21 without specifically addressing each one. For instance, I have cited evidence at paragraphs 452-  
22 459 of my Opening Report that includes specific instructions by Google (including video  
23 instructions) on how to cast one or more YouTube apps to a Cast-enabled media player and/or add  
24 media items to a queue. *See, e.g.*, Schmidt Op. Report, ¶453 (citing GOOG-SONOSWDTX-  
25 00005979, SONOS-SVG2-00060341, GOOG-SONOSWDTX-00006564, GOOG-SONOSNDCA-  
26 00057269, SONOS-SVG2-00060340, GOOG-SONOSWDTX-00005631). Dr. Bhattacharjee,  
27 however, fails to address this specific evidence and simply characterizes it as "describing how to  
28 download the YouTube app or Casting in general." I disagree with Dr. Bhattacharjee's generic

1 evidence burden of establishing that the '033 Patent is invalid, which means my burden is less than  
2 showing something is highly probable. I further understand that both my burden of establishing  
3 infringement and Dr. Bhattacharjee's burden of establishing non-infringement are lower than  
4 proving something beyond a reasonable doubt. Thus, in sum, I understand that, even if there is  
5 reasonable doubt or less than a high probability, infringement can still be established.

6 104. Dr. Bhattacharjee ignores this and instead focuses on alleged errors in *one* type of  
7 evidence that I relied upon. Even assuming arguendo that Dr. Bhattacharjee's critiques are  
8 accurate, that does not undermine the numerous other sources of evidence that confirm that the  
9 YouTube apps infringe.

10 105. Indeed, in my Opening Report, I relied on numerous sources and types of evidence  
11 other than source code, including (i) sworn deposition testimony of Google's 30(b)(6) witnesses  
12 and of other Google employees, (ii) Google's own representations to the Court, (iii) Dr.  
13 Bhattacharjee's own representations to the Court and opinions, (iv) Google's own interrogatory  
14 responses, (v) Google's own internal technical documentation and the like, (vi) Google's own and  
15 third-party publicly available information, (vii) real-world testing of the operation of the YouTube  
16 apps, and (viii) my own experiences and understanding of systems like the accused.

17 106. Thus, in my opinion, the totality of the evidence supports my overall opinion that  
18 each YouTube Sender satisfies the claims.

19 **X. GOOGLE'S DIRECT INFRINGEMENT**

20 107. As an initial matter, I note that Dr. Bhattacharjee's Rebuttal Report is filled with  
21 non-infringement arguments that I understand Google either (i) did not advance while fact  
22 discovery was open in this case (I understand that fact discovery closed on November 30, 2022) or  
23 (ii) advanced for the first time literally 1 day before the close of fact discovery.

24 108. In this respect, I understand that Google set forth its non-infringement contentions  
25 on April 7, 2022. *See* Google LLC's Fifth Supplemental Objections and Responses to Plaintiff  
26 Sonos, Inc.'s First Set of Fact Discovery Interrogatories (No. 12). As I explained in my Opening  
27 Report, I reviewed Google's non-infringement contentions with respect to the '033 Patent (*id.*, pp.  
28 47-51) and addressed them in my Opening Report. I note that Google provided only limited  
arguments, many of which were based on a claim construction position limiting "a remote playback

1 queue" to a "third-party application" that the Court recently precluded Google from advancing.

2 109. On November 29, 2022, I understand that Google served a supplement to its non-  
3 infringement contentions. *See* Google LLC's Ninth Supplemental Objections and Responses to  
4 Plaintiff Sonos, Inc.'s First Set of Fact Discovery Interrogatories (No. 12). I understand that Google  
5 blamed its tardy supplementation on Sonos filing a motion for leave to amend its infringement  
6 contentions with respect to the stream transfer feature of a Hub Sender, which Google asserted  
7 advanced "new" theories of infringement. *Id.*, 59-60. I have reviewed Sonos's supplemental  
8 contentions for the '033 Patent and note that Google's assertion is baseless. Regardless, Google's  
9 9<sup>th</sup> Supplemental response included at least the following new non-infringement positions for the  
10 '033 Patent (*id.*, pp. 59-62):

- 11 • "Google further incorporates by reference its third supplemental response to Sonos's  
12 Interrogatory No. 15. As explained in that response, when playing back media on the  
13 alleged 'computing device,' the accused YouTube application plays back a local queue  
14 stored on the computing device. Thus, even under Sonos's interpretation of 'remote  
playback queue,' Sonos has failed to show the accused YouTube application infringes  
the 'remote playback queue' limitations that require playback of the remote playback  
queue on the computing device."
  - 15 ○ I note that I see no basis for Google to argue that this new theory is premised  
on Sonos's Hub-Sender-stream-transfer amendment.
- 16 • "Moreover, the claims recite that the detection [of limitation 1.8] must occur before  
17 transitioning from the claimed 'first mode' to the claimed 'second mode.' .... Sonos's  
18 contentions do not explain how the transition from the 'first mode' to the 'second mode'  
19 occurs 'after detecting the indication.' For instance, crediting Sonos's allegation that the  
20 'Cast-enabled display will take back over playback responsibility that was the subject  
21 of the 'stream transfer' if the Cast-enabled display does not receive such an indication,'  
22 at most shows that the device will not transition from the claimed first mode to the  
claimed second mode. In short, Sonos has failed to present any theory establishing that  
the accused YouTube applications 'detect[] an indication that playback responsibility  
for the remote playback queue has been successfully transferred from the computing  
device to the at least one given playback device,' let alone a detection that occurs before  
transitioning from the first mode to the second mode."
  - 23 ○ I note that I see no basis for Google to argue that this new theory is premised  
on Sonos's Hub-Sender-stream-transfer amendment given that Sonos's theory  
was already presented to Google before. *See, e.g.*, '033 Supplemental Chart  
(redlined), p. 84 (previously referring to document "describing response to  
'ResumeSession' message").
  - 24 ○ I note that, to the extent that Google did not intend to limit this argument to  
Sonos's Hub-Sender-stream-transfer infringement theory, Google would be  
advancing a new non-infringement argument to Sonos's other infringement  
theories without any justification.
- 25 • "The accused YouTube applications do not infringe Claim 4 ... [because] [t]he accused  
26 YouTube applications do not include functionality for grouping speakers and Sonos has  
27

1 not shown YouTube applications have any awareness of whether a particular icon is for  
2 a speaker group.”

3       ○ I note that I see no basis for Google to argue that this new theory is premised  
4            on Sonos’s Hub-Sender-stream-transfer amendment.

5       110. As I discuss below, Dr. Bhattacharjee opines on several new non-infringement  
6            positions. I have set forth certain opinions in response to such positions assuming for sake of  
7            argument that the Court does not strike Dr. Bhattacharjee opinions on these new non-infringement  
8            positions.

9       A. **Independent Claim 1**

10       111. The language of claim 1 of the '033 Patent is set forth below with brackets  
11            containing labels to help identify the claim limitations, which are referenced in my Opening Report:

12       [1.0] A computing device comprising:

13       [1.1] at least one processor;

14       [1.2] a non-transitory computer-readable medium; and

15       [1.3] program instructions stored on the non-transitory computer-readable  
16            medium that, when executed by the at least one processor, cause the computing  
17            device to perform functions comprising:

18       [1.4] operating in a first mode in which the computing device is configured  
19            for playback of a remote playback queue provided by a cloud-based  
20            computing system associated with a cloud-based media service;

21       [1.5] while operating in the first mode, displaying a representation of one  
22            or more playback devices in a media playback system that are each i)  
23            communicatively coupled to the computing device over a data network and  
24            ii) available to accept playback responsibility for the remote playback queue;

25       [1.6] while displaying the representation of the one or more playback  
26            devices, receiving user input indicating a selection of at least one given  
27            playback device from the one or more playback devices;

28       [1.7] based on receiving the user input, [1.7(a)] transmitting an instruction  
29            for the at least one given playback device to take over responsibility for  
30            playback of the remote playback queue from the computing device, [1.7(b)]  
31            wherein the instruction configures the at least one given playback device to  
32            (i) communicate with the cloud-based computing system in order to obtain  
33            data identifying a next one or more media items that are in the remote  
34            playback queue, (ii) use the obtained data to retrieve at least one media item  
35            in the remote playback queue from the cloud-based media service; and (iii)  
36            play back the retrieved at least one media item;

1. We make a WatchNext call with the video ID and/or playlist ID. The response contains the tabbed page structure and queue contents for the requested video/playlist.

2. A second WatchNext request is send by clients requesting the radio automix ('RDAMPL...' or 'RDAMVM...') for the previously requested container (or video if in the single song queue case). The response contains the autoplay preview contents that we tack on to bottom of the queue on client UIs.

So, eg when you start playback on an album and then open the queue and scroll to view your 5-song autoplay preview, you are seeing the results of two back-to-back WatchNext requests, one for the album, one for the RDAMPL mix of the album.

133. **Second**, Dr. Bhattacharjee opines that “in connection with the Patent Showdown on the ‘615 patent [I] repeatedly stated that a User Device plays back a ‘local’ queue in the non-Casting state.” Bhatta. Rebuttal Report, ¶168; *see also id.*, ¶170. This is a mischaracterization.

134. Indeed, Dr. Bhattacharjee has not cited anything from my Prior Submissions where I opined that “a User Device plays back a ‘local’ queue in the non-Casting state.” Instead, the opinions referenced by Dr. Bhattacharjee at paragraphs 168-169 of his report are consistent with my opinion that the Sender’s local queue is loaded with data identifying one or more media items from the Watch Next queue, and thus, each Sender is “configured for playback of a remote playback queue,” as recited in limitation 1.4.

135. Regardless, even assuming Dr. Bhattacharjee was correct that a Sender plays from a “local queue,” it would merely reflect that the Sender’s local queue ***provides the means*** for the Sender to ***process*** the Watch Next queue for playback, much in the same way the Receiver’s storage of a window of the current, previous, and next videoIds for playback reflects the Receiver’s ***means for processing*** the Watch Next queue rather than amounting to a “local playback queue,” according to Dr. Bhattacharjee and the Court.

### (3) **“The Cloud Queue Runs the Show”**

136. As discussed before, I understand that the Court accepted Google and Dr. Bhattacharjee’s representations that a system cannot have both a “local playback queue” and a “remote playback queue”/“cloud queue” because “locally-stored information is merely a mirror reflecting a subset of what is happening in the cloud queue.” Dkt. 316, 9-10. During the Patent Showdown summary judgment hearing, for example, I understand that Google specifically

1 represented to the Court that, in the accused products, “the phone is *not* involved in the processing  
2 of the queue or the maintenance of the queue ... [T]he queue is up here in the Cloud.” Transcript  
3 of Court Proceedings [Patent Showdown Summary Judgment Hearing] (July 13, 2022) (“Patent  
4 Showdown Hr’g Tr.”), at 63-64. In short, as explained, the Court found that “the cloud queue runs  
5 the show” in the accused YouTube systems. *Id.*, 10.

6 137. However, Dr. Bhattacharjee now opines that the evidence “confirms that in the non-  
7 Casting use case a local queue, *not* a remote queue, is played back.” Bhatta. Rebuttal Report, ¶170  
8 (emphasis original). As discussed before, Dr. Bhattacharjee’s opinion is simply not credible based  
9 on Google and Dr. Bhattacharjee’s representations to the Court. *See* Schmidt Rebuttal Report,  
10 ¶¶302-303. Once again, the “local queue” on the Sender merely provides the means for the Sender  
11 to *process* the Watch Next queue for playback. The list of media items selected for playback that  
12 is provided by the WatchNext, PLDS, and Playlist Service runs the show for the Sender’s playback.

13 138. Dr. Bhattacharjee opines “[t]hat the User Device is configured to playback the local  
14 queue—even where items loaded into that queue may have originated from a Watch Next  
15 message—is reflected by the fact that users can manipulate the queue without those changes being  
16 reflected back to the YouTube servers.” Bhatta. Rebuttal Report, ¶171. I disagree. This, at best,  
17 shows that the means by which the Sender processes the Watch Next queue for playback (i.e., the  
18 Sender’s “local queue”) includes some additional functionality. But this does not detract from the  
19 fact that the list of media items selected for playback that is provided by the WatchNext, PLDS,  
20 and Playlist Service runs the show for the Sender’s playback. Indeed, Dr. Bhattacharjee cannot  
21 dispute that the videoIds provided to the Sender by the WatchNext service dictates what the Sender  
22 plays back, regardless of whether a user manipulates a local copy of a window into the Watch Next  
23 queue.

24 139. Moreover, Dr. Bhattacharjee opines that I “appear[] to equate ‘remote playback  
25 queue’ with a storage area of a YouTube server that stores a playlist.” Bhatta. Rebuttal Report,  
26 ¶172. This is a mischaracterization. In fact, I agree with Dr. Bhattacharjee that the mere storage  
27 of a “playlist” does not amount to a “playback queue.” *See* Bhatta Rebuttal Report, ¶¶172-77.<sup>10</sup>

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28 <sup>10</sup> As discussed above, however, Dr. Bhattacharjee’s opinion that a “playlist” is not equivalent to a  
“playback queue” directly contradicts his invalidity opinions. *Supra* ¶¶32-34.

- “MR. VERHOEVEN [FOR GOOGLE]: Yeah. And that just shows, *[in the accused products] the phone is not involved in the processing of the queue or maintenance of the queue. The queue is maintained up here*, the phone gives the instruction, and the receiver calls for the first item in the queue. *But the queue is up here in the Cloud*. It used to be down here in the [playback] device, and for a variety of technical reasons, it moved to the Cloud, just like so many other things have moved to the Cloud. And so the queue used to be maintained in the remote device or the speaker playback device. Sonos did it that way. Google did it that way.” Id., at 63-64.
- “Indeed, the accused applications are similar to the YouTube Remote and Tungsten/NexusQ prior art, with the exception that the prior art stored the playback queue locally on playback device (as required by claim 13) while *the accused applications moved the playback queue to the cloud* and thus do not infringe.” Bhatta. Rebuttal Showdown Report, ¶387;
- “[A]s I discussed in my opening report, Google stored the playback queue locally on its receiver devices in its prior art products. ... However, in 2013 *Google worked with Sonos to move the playback queue to the cloud*.” Id., ¶297;

Schmidt Rebuttal Report, ¶302, 307.

145. I therefore disagree with Dr. Bhattacharjee's attempt to limit Google and Dr. Bhattacharjee's representations to the Court as applying to only the casting mode and not the non-casting mode.

**c. Dr. Bhattacharjee's Opinions Regarding a Hub Sender Are Flawed**

**(1) Dr. Bhattacharjee Improperly Attempts to Limit My Infringement Opinions**

146. As an initial matter, Dr. Bhattacharjee incorrectly and improperly attempts to limit my infringement opinions of a Hub Sender to a scenario where “a Hub Device begin[s] playback when ‘another Sender initiates a Cast session with the Hub Sender.’” Bhatta Rebuttal Report, ¶188. This is nonsense.

147. Nowhere in my Opening Report do I limit my opinions to a specific mechanism by which the Hub Sender begins playback. *See* Schmidt Op. Report, ¶178 (evidence indicating that Hub Sender can begin playing back media while operating in the local playback mode based on various triggers, including a voice input, another Sender initiating a Cast session, and user input at the Hub Sender’s touchscreen display). Indeed, it would not even make sense in the context of claim 1 of the ’033 Patent for me to have limited my opinions in this manner given that the claim

1 is directed to capability and limitation 1.4 merely requires a “computing device” be programmed  
2 with the functional capability to “operat[e] in a first mode in which the computing device is  
3 configured for playback of a remote playback queue provided by a cloud-based computing system  
4 associated with a cloud-based media service.” In this regard, it does not require the “computing  
5 device” to be actively playing back from the “remote playback queue.” Thus, it is no surprising  
6 that Dr. Bhattacharjee cites to no paragraph in my Opening Report to support his assertion. *See*  
7 Bhatta Rebuttal Report, ¶188.

8 148. Rather, I understand that it appears Dr. Bhattacharjee is taking this approach to  
9 attempt to support Google’s damages expert’s opinions that improperly remove all of “MDx voice”  
10 from the damages pool.

11 149. As another initial matter, Dr. Bhattacharjee opines “Dr. Schmidt does not discuss  
12 the playback path for a ‘voice input’ (or any other ‘trigger’), and has not shown that a Hub Device  
13 is configured to play back a remote queue, as opposed to a local queue, when playback is initiated  
14 using a voice command.” Bhatta. Rebuttal Report, ¶188. This is a remarkable opinion by Dr.  
15 Bhattacharjee given his and Google’s repeated and vehement representations to the Court that  
16 Google’s playback devices (that include Hub Devices) have ***no local playback queue at all*** in  
17 connection with any of the YouTube applications. *See also, e.g.*, Bhatta. Rebuttal Report, ¶¶172  
18 (“[A]s [Dr. Bhattacharjee] showed in [his] declaration during the Patent Showdown, when Casting,  
19 a Cast-receiver may play back a cloud queue (also called a ‘Shared Queue’ or ‘Remote Queue’)  
20 implemented by the file SharedQueue.java. ‘615 Showdown Declaration, ¶¶50, 65, 73.’”), 185  
21 (“[W]hen Casting the accused YouTube applications play back an ‘MDx playback queue’ (cloud  
22 queue) ....”). Thus, Google’s and Dr. Bhattacharjee’s own admissions confirm that a Hub Device  
23 satisfies limitation 1.4.

24 (2) **Dr. Bhattacharjee Advances a Flawed, Brand New Non-**  
25 **Infringement Position**

26 150. Dr. Bhattacharjee opines “that a Hub Device is not a ‘computing device’ operating  
27 in the claimed ‘first mode’ when a User Device is Casting to the Hub Device” and “[t]he Hub  
28 Device is a Cast receiver device and is acting as a claimed ‘playback device’ in this case.” Bhatta.  
Rebuttal Report, ¶¶187, 189-93. I disagree.

1 remote playback queue.

2 165. Dr. Bhattacharjee repeats a similarly flawed position in connection with limitation  
3 1.9. The additional explanation that I provide in connection with limitation 1.9 applies here as well.  
4 *Infra ¶¶208-230.*

5 166. For at least the foregoing reasons, Dr. Bhattacharjee failed to rebut my opinion that  
6 each YouTube Sender satisfies limitations 1.5 and 1.6.

7 4. **[1.7] Each YouTube Sender Is Programmed with the Capability to,  
8 Based on Receiving the User Input, Transmit an Instruction for the at  
9 Least One Given Receiver to Take Over Responsibility for Playback of  
10 the Remote Playback Queue from the YouTube Sender, Where the  
Instruction Configures the at Least One Given Receiver to (i), (ii), and  
(iii)**

11 167. Dr. Bhattacharjee opines that I “failed to show that Limitation 1.7 is satisfied by the  
12 accused User Devices and Hub Devices for several reasons.” Bhatta. Rebuttal Report, ¶197. In  
13 supporting his opinion, Dr. Bhattacharjee advances *numerous* new theories not previously  
14 presented by Google. While I understand that this was improper and the Court will likely strike  
15 many (if not all) of Dr. Bhattacharjee’s non-infringement opinions, nothing Dr. Bhattacharjee says  
16 in his Rebuttal Report changes my ultimate opinion that each YouTube Sender satisfies limitation  
17 1.7.

18 a. **Dr. Bhattacharjee’s Opinions Regarding a User Device  
Provisioned with a YouTube App Are Flawed**

19 (1) **Dr. Bhattacharjee’s New “The” Remote Playback Queue  
Argument Is Flawed**

20 168. Dr. Bhattacharjee argues “Dr. Schmidt cannot identify the same alleged ‘remote  
21 playback queue’ for Limitations 1.4 and 1.7, as required by the claim language,” purportedly  
22 because:  
23

24 With MDx, a playback device plays back a Shared Queue (also known as a “Remote  
25 Queue” or “MDx queue”) during a Cast session. The Shared Queue is created only  
after a Cast session is initiated. Because Limitation 1.4 is directed to playback when  
not Casting, it cannot involve playback of the Shared Queue.

26 Bhatta. Rebuttal Report, ¶¶162-63 (emphasis original); *see also id.*, ¶185. Likewise, specifically  
27 in connection with limitation 1.7, Dr. Bhattacharjee argues that my “opinion fails because [I have]  
28 not shown that the accused computing devices transfer playback responsibility of “the remote

1 playback queue” that [I have] accused in Limitation 1.4.” *Id.*, ¶199. I disagree.

2 169. As an initial matter, I understand that this is a new non-infringement position that  
3 Google never raised during fact discovery. *Supra* ¶109. I note Google has no justification for not  
4 bringing this flawed non-infringement position before given that Google has been aware of Sonos’s  
5 contention that a Sender transfer playback responsibility of the Watch Next queue to a Receiver  
6 since at least February 2022. I offer my response here under the assumption that the Court does  
7 not strike Dr. Bhattacharjee’s opinions on this topic.

8 170. At the core of Dr. Bhattacharjee new non-infringement position is the faulty premise  
9 that the **contents** of the claimed “remote playback queue” must be the same before and after transfer  
10 of playback responsibility. *See, e.g.*, Bhatta. Rebuttal Report, ¶¶208-209 (providing examples  
11 where the Autoplay videos in YouTube Main and YouTube Kids differed before and after Casting).  
12 In other words, in the context of the infringing YouTube system, Dr. Bhattacharjee’s new non-  
13 infringement position is incorrectly premised on the position that the claim mandates that the  
14 “remote playback queue” after Casting has the same **contents** as before Casting. Dr. Bhattacharjee  
15 is mistaken for various reasons.

16 171. **First**, the Court’s Order makes clear that the **contents** of a “playback queue” does  
17 not make something a “playback queue” but rather, the fact that the thing is “a list of multimedia  
18 content [(or one or more media items in the words of the ’033 Claims)] selected for playback”  
19 dictates whether it is a “playback queue” or not. For instance, the Court explained that a “playback  
20 queue” could contain a single media item or multiple media items. Dkt. 316, pp. 7-8. Likewise, in  
21 response to Sonos’s “assert[ion] that the content in the queue need not be selected directly by a  
22 user” to which Google argued “that a user must directly populate and manage the queue,” the Court  
23 concluded “Google’s argument does not persuade.” *Id.*

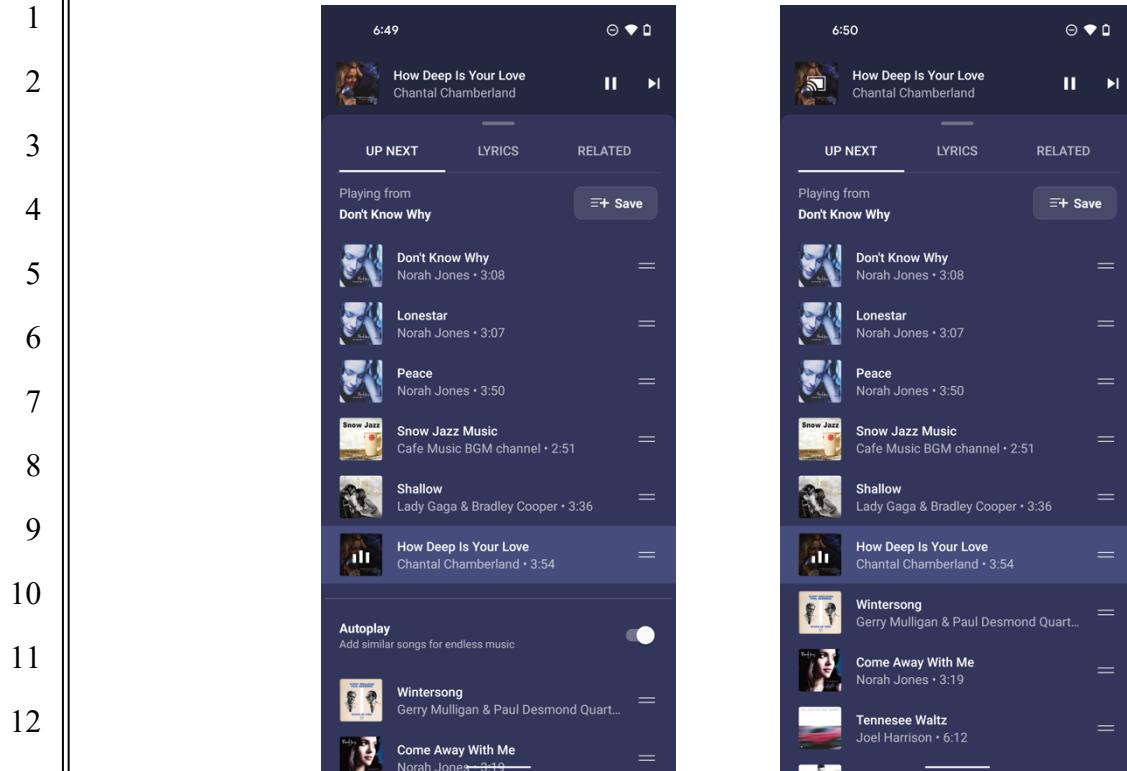
24 172. **Second**, the ’033 Patent confirms that the contents of the “remote playback queue”  
25 after playback responsibility is transferred may be different from the contents of the “remote  
26 playback queue” after transfer. For example, as I have described several times, the ’033 Patent  
27 describes an embodiment in which a user listens to music on the user’s MacBook Pro from an  
28 online media service, such as “turntable.fm or other virtual room that a user can enter to choose

1 from a plurality of *online disc jockeys (DJs) deciding what to play next ....*" The user then decides  
2 to play that music on the user's "household playback system" (comprising one or more "playback  
3 devices") by selecting "[a] button or other indicator ... added to the turntable.fm Web application"  
4 that "switch[es] the content being played to the playback system for output (e.g., to the Sonos<sup>TM</sup>  
5 system rather than ... the Mac Book<sup>TM</sup>)." '033 Patent, 12:65-13:11. Of course, in this example  
6 given that the online service is controlling the content in the "remote playback queue," the content  
7 of that queue may be different when the user is listening through the MacBook Pro versus when  
8 the user transfers playback to the "household playback system."

9       173. Thus, that Dr. Bhattacharjee can identify some instances where the contents of the  
10 Watch Next queue before Casting might be different after Casting is a sideshow. Notably, Dr.  
11 Bhattacharjee cannot dispute the fact that the contents of the Watch Next queue can be same before  
12 and after Casting YouTube Main.

13       174. It is also worth noting that Dr. Bhattacharjee cannot dispute that the content of the  
14 list of media items that are for playback by the Receiver after Casting YouTube Music is the same  
15 as the content of the list of media items that was previously for playback by the Sender when the  
16 "autoplay" feature is enabled.

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175. Dr. Bhattacharjee also takes issue with the fact that the MDx session server manages  
 a copy of the Watch Next queue apparently because “a ‘copy of the Watch Next queue’ is  
 necessarily different than the original ‘Watch Next queue.’” Bhatta. Rebuttal Report, ¶204. In this  
 respect, Dr. Bhattacharjee appears to be arguing that the claimed “remote playback queue” cannot  
 move, or in other words, where the “remote playback queue” is maintained in data storage in the  
 “cloud-based computing system” must be fixed. I disagree with this, yet additional, new non-  
 infringement position.

176. The claims require that the “remote playback queue” is provided by the same  
 “cloud-based computing system associated with the cloud-based media service” before and after  
 the transfer, but they do not otherwise say that the “remote playback queue” must be fixed at one  
 data storage location within that “cloud-based computing system” or that it cannot otherwise move.

177. In the accused system, before Casting, the list of media items selected for playback  
 by the Sender that runs the show is provided by the YouTube cloud infrastructure and specifically,  
 by the WatchNext, PLDS, and Playlist Service with storage via the Playlist Service. *Supra* ¶¶46-  
 52. Likewise, after Casting, the list of media items selected for playback by the Receiver that runs

1 the show is also provided by the YouTube cloud infrastructure and also specifically, by the  
2 WatchNext, PLDS, and Playlist Service with storage via the Playlist Service, although the MDx  
3 session server facilitates management of the list. *Supra ¶¶60-63*. In both cases, the WatchNext  
4 Service provides one or more videoIds of media items that the Sender or Receiver is to playback  
5 next, which are from the list of one or more media items selected for playback that is stored in the  
6 YouTube cloud infrastructure. Likewise, in both cases, the next videoIds from the list stored in the  
7 YouTube cloud infrastructure ultimately controls the Sender's or Receiver's playback.

8 178. Thus, there is nothing in Dr. Bhattacharjee's Rebuttal Report that changes my  
9 opinion that a user device provisioned with a YouTube app literally satisfies limitation 1.7 (and  
10 limitation 1.4).

11 179. However, even assuming *arguendo* that some or all of Dr. Bhattacharjee's new  
12 claim construction requirements and/or non-infringement positions were correct (they are not), it  
13 is my opinion that a user device provisioned with a YouTube app would still satisfy limitation 1.7  
14 (and limitation 1.4) under the Doctrine of Equivalents.

15 180. **First**, this is because, in my opinion, there is an insubstantial difference between (i)  
16 the **contents** of a list of one or more media items selected for playback being the same before and  
17 after transfer and (ii) the **contents** of a list of one or more media items selected for playback being  
18 different after transfer as compared to before transfer.

19 181. In fact, the Sender performs the same function (e.g., operating in a first mode in  
20 which it is configured for playback of a list of one or more media items selected for playback  
21 provided by the YouTube cloud infrastructure), in the same way (e.g., by interacting with the  
22 YouTube cloud infrastructure providing the list of one or more media items selected for playback),  
23 to achieve the same result (e.g., playing back media items from the list of one or more media items  
24 selected for playback provided by the YouTube cloud infrastructure) irrespective of whether the  
25 **contents** of the list provided by the YouTube cloud infrastructure is the same or different before  
26 and after Casting.

27 182. Likewise, the Receiver performs the same function (e.g., obtaining from the  
28 WatchNext service of the YouTube cloud infrastructure a videoId of a next media item in the list

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Dated: January 23, 2023

*Douglas C. Schmidt*

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DOUGLAS C. SCHMIDT